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## (54) Safety device for a parallelepipedic cassette

(57) A safer for a parallelepipedic cassette comprises a container with two flat sides and four mutually perpendicular narrow sides for enclosing the cassette at the flat sides and three of the narrow sides. The fourth narrow side defines an access opening through which the cassette can be inserted into and removed from the container. A detent member is mounted on one of said three narrow sides, which joins the open fourth side, and is guided for displacement transversely of the flat sides of the container between an operative position and an inoperative position. The detent member blocks the passage through the access opening in the operative position and allows the passage through the access opening in the inoperative position. A latch member is biased to lock in an engaged position engage the detent member in the operative position thereof and Is adapted to be disengaged by an external mechanism to release the detent member for movement to the inoperative position.

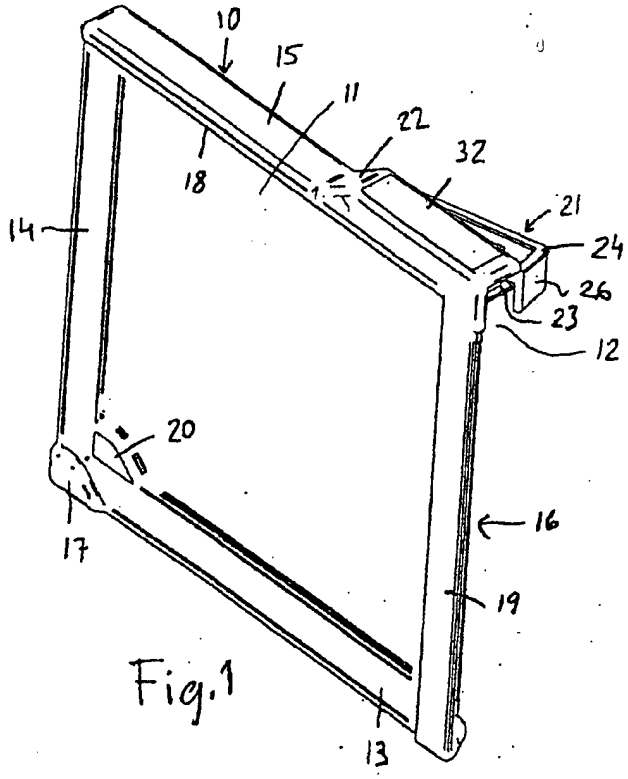


Fig.1

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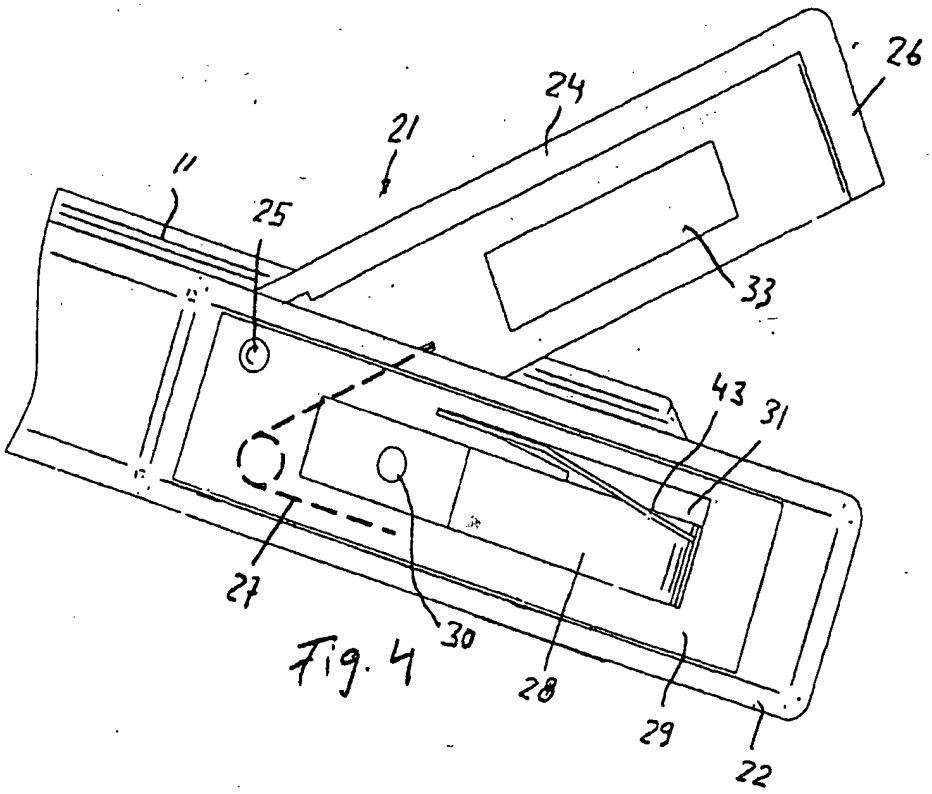


Fig. 4

## Description

### Background of the invention

Field of the invention

**[0001]** The present invention relates to a safer for a prallellepipedic cassette, particularly for such cassettes as are used for CD, DVD, videotapes, data games, MC or the like.

**[0002]** A safer is a device which is mounted on the cassette and is locked to the cassette so that it can be removed therefrom only by an authorized person. Safers are used in shops and department stores in order to prevent that the cassette with the object contained therein is removed from the shop or department store without being paid for, and for this purpose the safer is provided with an element which triggs an alarm if the safer is moved from the shop or a defined area in the department store.

**[0003]** More particularly the invention relates to a safer of the kind comprising a container with two flat sides and four mutually perpendicular narrow sides for enclosing the cassette at the flat sides and three of the narrow sides, the fourth narrow side defining an access opening through which the cassette can be inserted into and removed from the container; a detent member mounted on one of said three narrow sides, which joins said open fourth side, for movement between an operative position and an inoperative position the detent member blocking the passage through the access opening in said operative position and allowing the passage through the access opening in said inoperative position; and a latch member biased to an engaged position to lock the detent member in the operative position thereof, the latch member being adapted to be disengaged by an external mechanism to release the detent member for movement to the inoperative position.

Description of the Prior Art

**[0004]** US 5,147,034 ( Broadhead et al.) discloses a safer of the type defined above wherein the detent member comprises a rail and a stop element connected by a hinge to one end of the rail for pivotal movement about a transverse axis. the rail with the stop element is located inside the container adjacent one of the enclosing narrow sides, which extends transversely of the access opening and joins said opening. The detent member can be moved axially parallel to the plane of said one narrow side between the operative and inoperative positions. When the detent member is in the operative position locked by the latch member the stop element blocks the passage through the access opening but when the detent member is unlatched and is moved to the inoperative position the stop element can pivot to a position in which it allows free passage through the access opening.

**[0005]** EP 0 508 201 A2 (Pataco AG) and WO 00/75469 A1 (MW Trading (UK) Ltd) describe safers wherein the detent member comprises a rail which is located inside the container for displacement adjacent one of the enclosing narrow sides between the operative and inoperative positions as described in US 5,147,034. However, the stop element is integral with the rail and in the inoperative position can be resiliently bent so as to allow free passage through the access opening.

**[0006]** US 5,882,052 (Whitehead) describes safers wherein the detent member is mounted to the outside of the container for movement between the operative and inoperative positions along a narrow side which extends transversely of the access opening and joins said opening. The detent member is guided for imparting to said member also a movement transversely of said narrow side when moving between the operative and inoperative positions

Problem involved

**[0007]** In practice it has been found that a product protected against theft or shop lifting by prior art safers of the type referred to herein although the container is of a sturdy construction and the latch member can be unlocked only by using a matching external mechanism nevertheless can be removed from the safer by an unauthorized person by breaking open the container or the latch member by means of a tool that is inserted into the safer particularly at small gaps or slits existing between different parts of the safer, or by striking the safer against a hard surface.

**[0008]** Another problem is that although the existing safers of the kind referred to herein can be easily handled by the attendants at a counter where the safer is to be removed from the product the handling of the safer is felt as an inconvenience.

### Brief Summary of the Invention

**[0009]** The object of the Invention Is to provide a safer of the kind referred to herein which overcomes the problems accounted for and to provide at the same time a simple safer construction which is well suited for mass production at low costs.

**[0010]** This object and further objects which will be apparent from the description which follows are achieved by a safer of the kind referred to herein which according to claim 1 is characterized in that the detent member is guided for displacement transversely of the flat sides of the container between the operative position and the inoperative position.

**[0011]** Preferred details of the invention appear from the dependent claims.

### Brief Description of the Drawings

**[0012]** Illustrative embodiments of the invention will

be described below with reference to the accompanying drawings in which

**FIG 1** is a perspective view of a safer for CD cassettes in a preferred embodiment of the invention the safer being shown in the open position

**FIG 2** is a perspective view Illustrating insertion of a CD cassette into the safer of FIG 1,

**FIG 3** is a perspective view of the safer in FIG 1 in the closed position with the cassette inserted therein,

**FIG 4** is a fragmentary plan view of a detent mechanism in the inoperative position thereof allowing insertion of the cassette into the safer,

**FIG 5** is a fragmentary perspective view of the detent mechanism corresponding to FIG 4,

**FIG 6** is a longitudinal cross sectional view of the detent mechanism latched in the operative position blocking the passage into and out of the safer,

**Fig 7** is a perspective view of the safer engaged with an external opener,

**FIG 8** is a fragmentary horizontal cross sectional view of a vertical wall of the opener with the detent mechanism applied against a permanent magnet therein the detent mechanism being shown in longitudinal cross sectional view,

**FIG 9** is a fragmentary vertical cross sectional view of a bottom wall of the opener with the detent mechanism applied against a magnet therein the detent mechanism being shown in plan view,

**FIG 10** is a fragmentary side view of the container,

**FIG 11** is a side view of the detent member,

**FIG 12** is a transverse cross sectional view of the detent member of the detent mechanism, taken along line A-A in FIG 11,

**FIG 13** is a plan view of the detent mechanism in a modified embodiment thereof shown in the operative position,

**FIG 14** is a perspective view of the safer with the detent mechanism of FIG 13 positioned in an opener,

**FIG 15** is a plan view of the detent mechanism of FIG 13 when positioned in the opener of FIG 14 fragmentarily shown,

**FIG 16** is a perspective view of the safer of the invention in a second embodiment thereof shown in the inoperative position,

**FIG 17** and **18** are perspective views of a third embodiment of the safer of the invention shown in the inoperative and operative position, respectively, and

**FIG 19** is an exploded view of the safer in FIGS 17 and 18.

**Detailed Description of the Invention**

**[0013]** The safer disclosed in FIGS 1 to 3 comprises in a known manner a container 10 which can be injection molded of a transparent plastics material and comprises two flat sides and four narrow sides, viz. a closed side wall 11, an opposite open side 12, three edge walls 13, 14 and 15 and an access opening 16. The container is dimensioned to receive therein a CD cassette which is inserted into the container through the access opening and is confined in the container by side wall 11 at one side of the cassette and by a corner flange 17, a rim 18 extending along wall 15, and a rail 19 extending between walls 13 and 15 and defining together with side wall 11 access opening 16. An opening 20 is provided in side wall 11 for productional reasons. An element (not shown) attached to the inside surface of side wall 11 can be adapted to trig an alarm system if the safer is removed from a display or shop as is the customary purpose of the safer. The container can be adapted to receive therein other products such as cassettes or packages for DVD, video tapes, data games or other attractive and expensive products that are exposed in a shop or department store.

**[0014]** A detent mechanism 21 is located on top of the container on the upper surface of wall 15 adjacent access opening 16. It comprises a housing 22 integral with the container, which forms a slot like space 23 open at the rear side of wall 11. A hook shaped detent member 24 is mounted at one end thereof to the housing by means of a pin 25 extending transversely of wall 15, for pivoting between the position shown in FIGS 4 and 5 in which the detent member projects obliquely from housing 22, and that shown in FIG 6 in which the detent member is received in space 23. The detent member has at the other end a stop member 26 which is formed by an end flange on the detent member, projecting downwards therefrom. In the position of the detent member shown in FIG 5 the stop member partly covers access opening 16 at the upper end thereof and thus blocks the passage through the access opening. This is an operative position of the detent member while the position of the detent member shown in FIGS 4 and 5 is an inoperative position thereof. The detent member is biased towards the inoperative position by a spring 27.

**[0015]** A latch mechanism for locking the detent mem-

ber in the operative position comprises a spring blade 28 which is mounted in a space 29 formed by housing 22, by means of a pin 30 integral with the housing. The spring blade is biased downwards by the inherent resiliency thereof to extend at the free end of the spring blade into space 23 through an opening 31 between spaces 23 and 29. Space 29 is covered by a cover plate 32 which is securely connected with housing 22 as by ultra sound welding. The cover plate abuts pin 30 in order to securely hold the spring blade on that pin.

**[0016]** Detent member 24 forms a recess 33 in the upper surface thereof, which is dimensioned and shaped to receive the free end portion of spring blade 28 therein when the detent member is in the operative position. When the detent member is being swung clockwise from the inoperative position shown in FIGS 4 and 5 towards the operative position shown in FIG 6, it cams the spring blade upwards against the inherent resiliency thereof and then, when the operative position is reached the spring blade snaps into the recess. The detent member is now locked in the operative position by the spring blade. If a dishonest person tries to swing the detent member back to the inoperative position this will be strongly resisted by the spring blade since pressure will be exerted against an edge of the spring blade and the spring blade offers a very great resistance against bending in this direction.

**[0017]** In order that the detent member cannot be broken away from the operative position by means of a tool that is inserted into existing slits in the safer housing 22 there are parallel grooves 34, FIG 11, at the slot formed by space 23, receiving matching ridges 35, FIG 12, on the detent member when this is in the operative position. Moreover, for the same purpose stop member 26 is beveled on the outside thereof at the lower edge of the stop member at 26A, and the stop member is integral with a stiffening web 36 formed by the detent member, FIG 11.

**[0018]** When the detent mechanism 21 is in the inoperative position as shown in FIGS. 4 and 5 the passage through access opening 16 is free and a cassette 37 can be inserted into container 10 through the access opening as shown in FIG 2. Then the detent member 24 is swung manually to the operative position, shown in FIGS 3 and 6 in which stop member 26 of detent member 24 blocks the access opening, so that the cassette cannot be withdrawn from the container. The cassette is exposed to the customers in the department store or shop with the cassette enclosed in the safer which trigs an alarm system if the cassette together with the safer is removed from the department store or shop.

**[0019]** The cassette is removed from the safer by an attendant in the department store or shop and this is done by means of an external opener 38 shown in FIG 7. The opener comprises two side walls 39 and 40 at right angle to each other, and a bottom 41. The opener is dimensioned such that the safer with the detent mechanism can be positioned in the opener with side wall 11 resting on bottom 41 and with the top side of housing 22 applied against side wall 39. A strong permanent magnet 42 is mounted in side wall 39, and with the safer positioned in the opener as described this magnet attracts spring blade so that it will be bent out of recess 33 allowing the detent member to swing to the inoperative position under the bias of spring 27 when the safer is lifted from the bottom 41 of the opener. Then, cassette 37 can be removed from the safer.

**[0020]** An unauthorized person who wants to open the safer could use a strong magnet which is set against the top of housing 22 in order to bring spring blade 28 to the releasing position. In order to prevent this there is mounted in a slot in housing 22 a second spring blade 43 which has its plane extending in the transverse direction of the plane of spring blade 28. The free end of spring blade 43 overlies spring blade 28 and prevents spring blade 28 to be moved out of recess 33 in detent member 24 as is necessary in order to release the detent member for movement to the inoperative position. In bottom 41 a further permanent magnet 44 is mounted, FIG 9, which attracts spring blade 43 when the safer is positioned in the opener as described above and bends this spring blade to a position which allows the necessary movement of spring blade 28 under the influence of magnet 42.

**[0021]** The security provided by means of spring blade 43 can also be achieved by the arrangement disclosed in FIG 13. A spring blade 45 is connected with housing 22 at one end of the spring blade extending in the transverse direction of side wall 11 and forming a hook 46 at the other end. In the operative position of the detent member the hook engages a notch 47 in the detent member to hold this in the operative position. The opener in this case in addition to magnet 42 in side wall 39 has a magnet 48 in side wall 40 no magnet being provided in bottom 41. When the safer is positioned in the opener, FIG 14, spring blades 28 and 45 will be actuated by their respective magnets 42 and 48 simultaneously in order to release the detent member for movement to the inoperative position. Reference is made to FIG 8 and FIG 15, respectively. The detent member forms a chamfered end surface 49n order to engage hook 46 at this surface and bend spring blade 45 at movement of the detent member to the operative position before the hook can snap into notch 47.

**[0022]** The latch mechanism including spring blade 28 can be provided alone as can also the latch mechanism including spring blade 45 but for increased safety spring blade 28 should be provided in combination with either spring blade 43 or spring blade 45.

**[0023]** In a second embodiment of the safer of the invention the detent member 24' is mounted on the container for linear displacement in the transverse direction of side wall 11 between the inoperative position disclosed in FIG 16 and the operative position disclosed in FIG 3. For example, the detent member can be mounted on pins which are guided for linear movement in housing 22, or the detent member can be displaced on pins

which are fixedly mounted in the housing. The detent mechanism can be the same as that disclosed in FIGS 5 and 6. The detent member can be spring biased towards the inoperative position e.g. by means of helical pressure springs passed onto the pins.

**[0024]** FIGS 17 to 19 disclose a third embodiment of the safer of the Invention. Stop member 26 of the detent mechanism is mounted to or made integral with a cylindrical shaft 50 which is mounted for axial displacement and rotation in housing 22. In FIG 17 shaft 50 projects from the housing and stop member is in a rotated position in which it leaves access opening 16 unblocked so that a cassette can be inserted into or withdrawn from the container through the access opening. In other words, this is the Inoperative position of the detent mechanism. Shaft 50 is biased by a helical pressure spring 51 towards this position. When shaft 50 Is pushed axially into housing 22 a rotational movement is imparted to the shaft, which can be effected in a well known manner by means of a pin fixedly mounted in housing 22 and slidably engaging a helical groove in the shaft. By rotation clockwise of the shaft as seen in FIG 17 when the shaft is moving axially stop member 26 takes the position shown in FIG 15 which is the operative position of the detent mechanism, the stop member blocking the access opening. The detent mechanism is latched in this position by means of the latch mechanism shown in FIGS 5 and 6. Shaft 50 forms recess 33, and spring blade 28 is mounted in housing 22 for engagement with the recess in the operative position of the detent mechanism. Opener 38 shown in FIG 7 can be used as described in order to unlatch the detent mechanism.

**[0025]** The embodiments described are illustrative only. Modifications thereof can be made by the man skilled in the art without departing from the scope of the invention as defined in the following claims.

## Claims

1. A safer for a parallelepipedic cassette, comprising

   a container with two flat sides and four mutually perpendicular narrow sides for enclosing the cassette at the flat sides and three of the narrow sides, the fourth narrow side defining an access opening through which the cassette can be inserted into and removed from the container;

   a detent member mounted on one of said three narrow sides, which joins said open fourth side, for movement between an operative position and an inoperative position the detent member blocking the passage through the access opening in said operative position and allowing the passage through the access opening in said inoperative position; and

   a latch member biased to an engaged position to lock the detent member in the operative position thereof, the latch member being adapted to be disengaged by an external mechanism to release the detent member for movement to the inoperative position, **characterized in that** the detent member is guided for displacement transversely of the flat sides of the container between the operative position and the inoperative position.

2. The safer of claim 1 wherein the detent member is mounted for pivotal movement between the operative and inoperative positions.

3. The safer of claim 1 wherein the detent member is mounted for linear displacement between the operative and inoperative positions.

4. The safer of claim 2 or 3 wherein the detent member comprises an L-shaped element which has a first limb extending along said one of said three narrow sides, and a second limb forming a stop element extending partly over the access opening in the operative position of the detent member.

5. The safer of claim 2 and 4 wherein said first limb is pivotally connected with the container.

6. The safer of claim 3 and 4 wherein said first limb is connected with the container for linear displacement.

7. The safer of claim 5 or 6 wherein an outside surface of the container to be engaged by the detent member in the operative position thereof forms at least one groove for receiving therein a matching bead on the detent member in the operative position thereof.

8. The safer of claim 1 wherein the detent member is mounted on the container for rotational movement about an axis extending along said one of said three narrow sides, and where the detent member has a stop element projecting radially therefrom for movement between the operative and inoperative positions transversely of the flat sides by rotation of the detent member the blocking element extending partly over the access opening in the operative position of the detent member.

9. The safer of claim 8 wherein the detent member is mounted on the container for axial displacement and wherein means are provided for imparting a rotational movement to the detent member by the axial displacement thereof.

10. The safer of any of claims 1 to 9 wherein the detent

member is spring biassed towards the inoperative position thereof.

11. The safer of any of claims 1 to 10 wherein the latch member comprises a spring blade of a magnetically attractable material, which is mounted to the container and engages, by the inherent spring bias, a recess formed by the detent member, when the detent member is in the operative position, the external mechanism operating magnetically to disengage the spring blade from the detent member.

12. The safer of claim 11 wherein the spring blade is located in a plane that is substantially parallel with a plane in which the detent member moves between the operative and inoperative positions.

13. The safer of claim 11 or 12 wherein a second spring blade overlays said spring blade obstructing disengagement thereof, said second spring blade being magnetically attractable to be magnetically attracted for releasing said first mentioned spring blade for movement to the disengaged position.

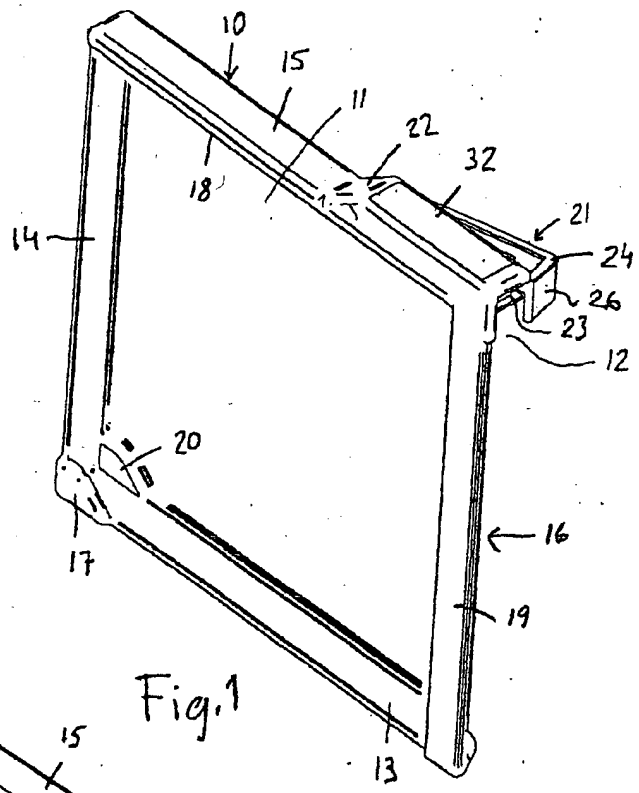
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Fig. 1

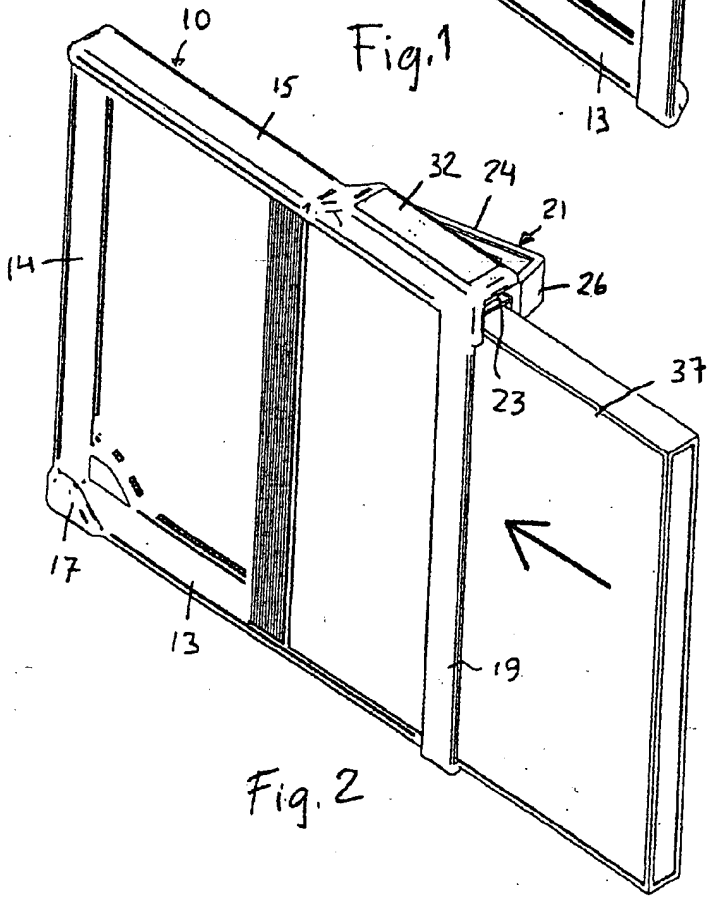
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Fig. 2

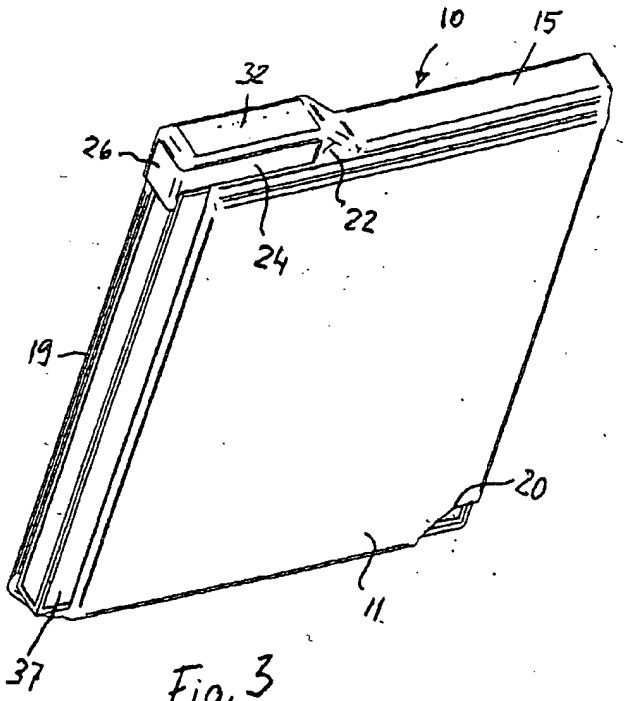


Fig. 3

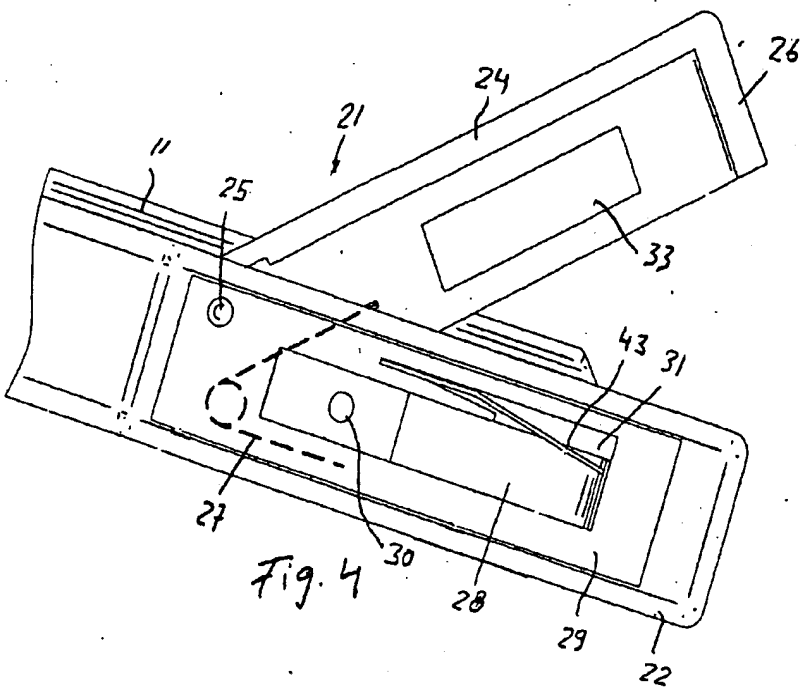


Fig. 4

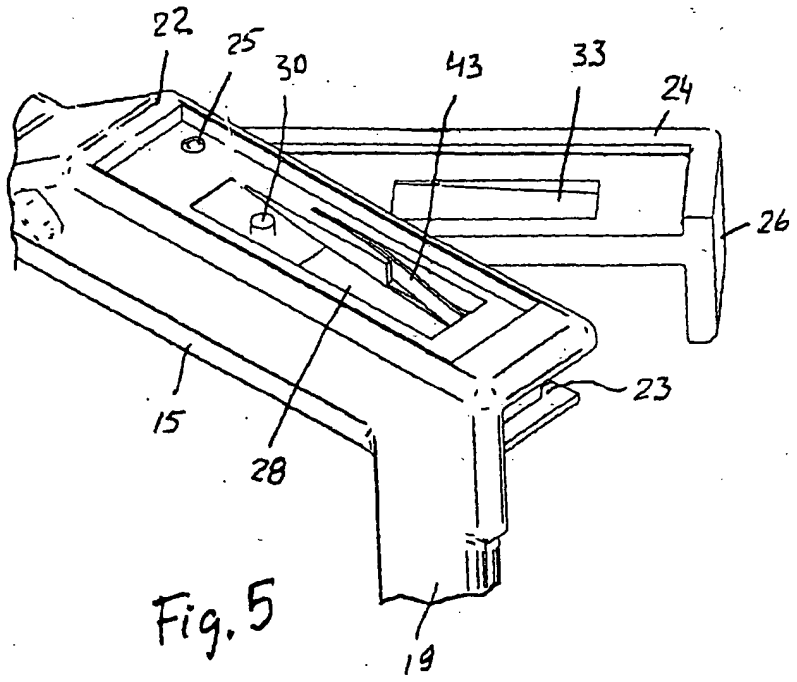


Fig. 5

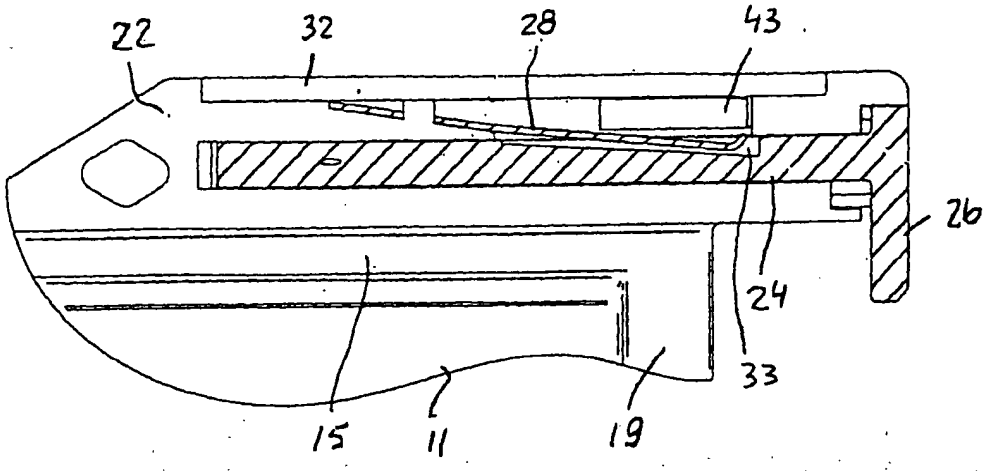


Fig. 6

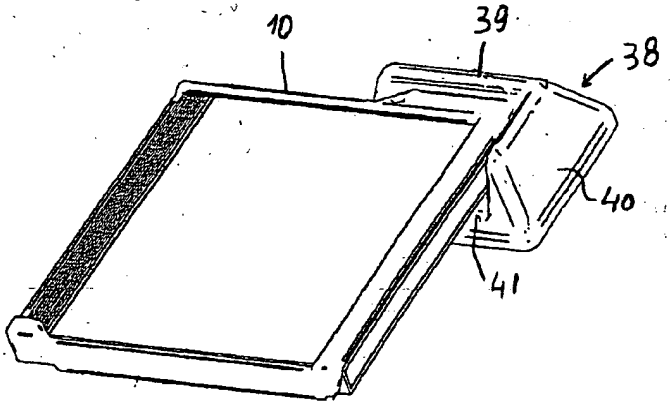


Fig. 7

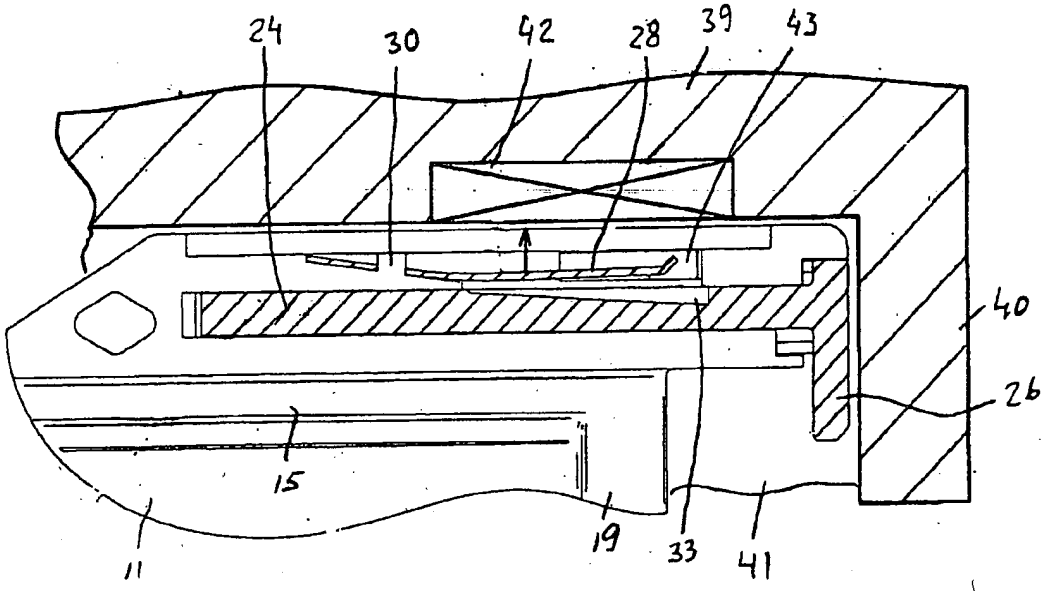


Fig. 8

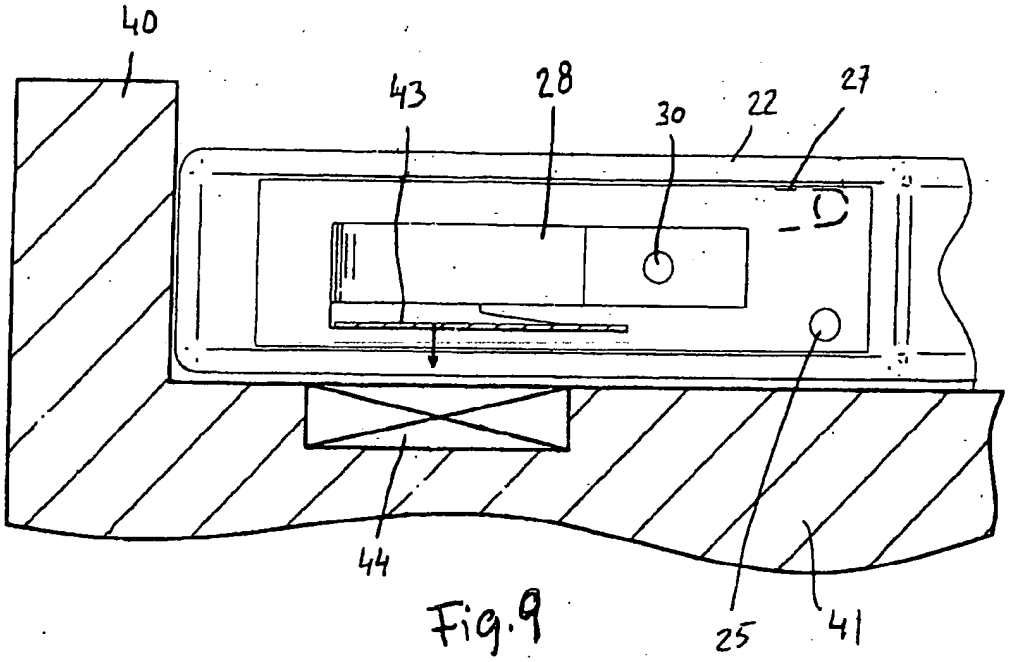


Fig. 9

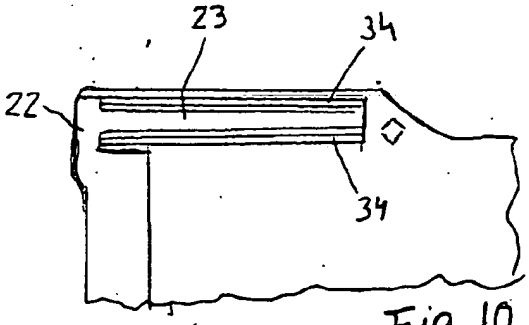


Fig. 10

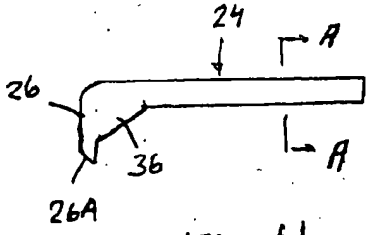


Fig. 11

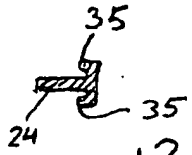


Fig. 12

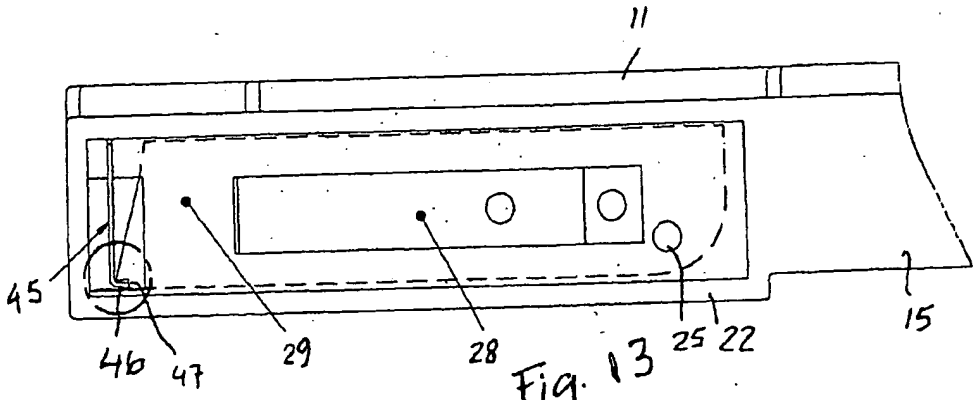


Fig. 13

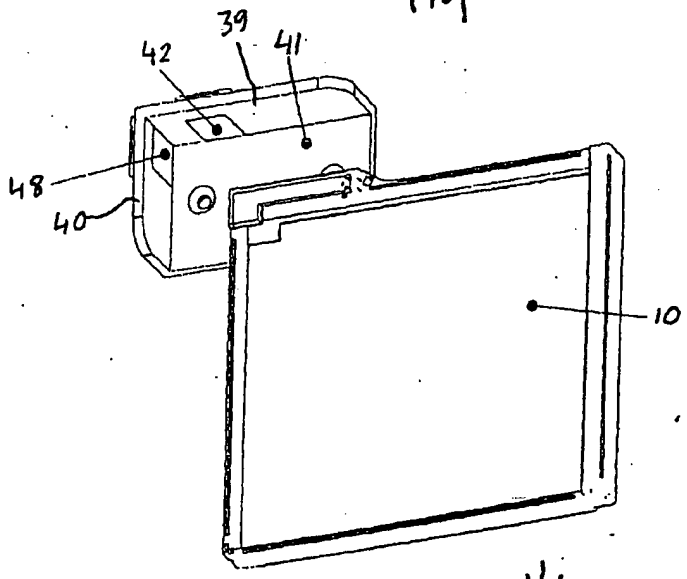


Fig. 14

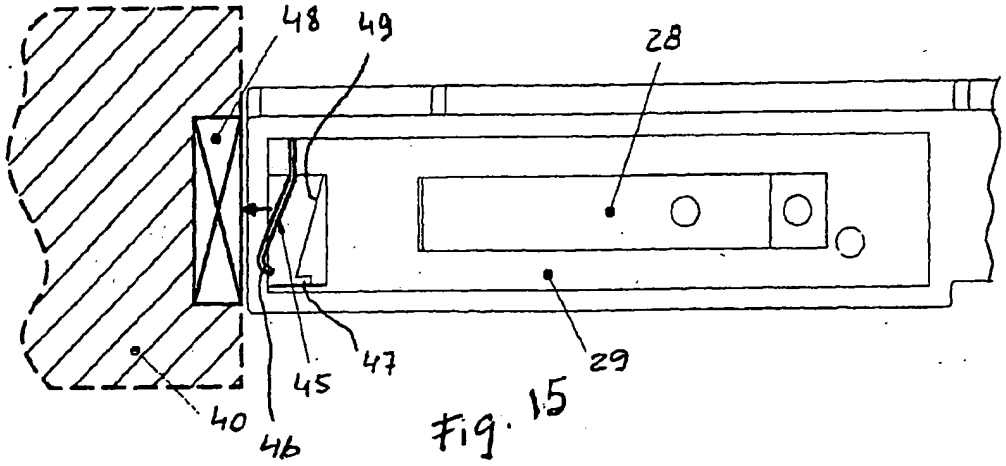


Fig. 15

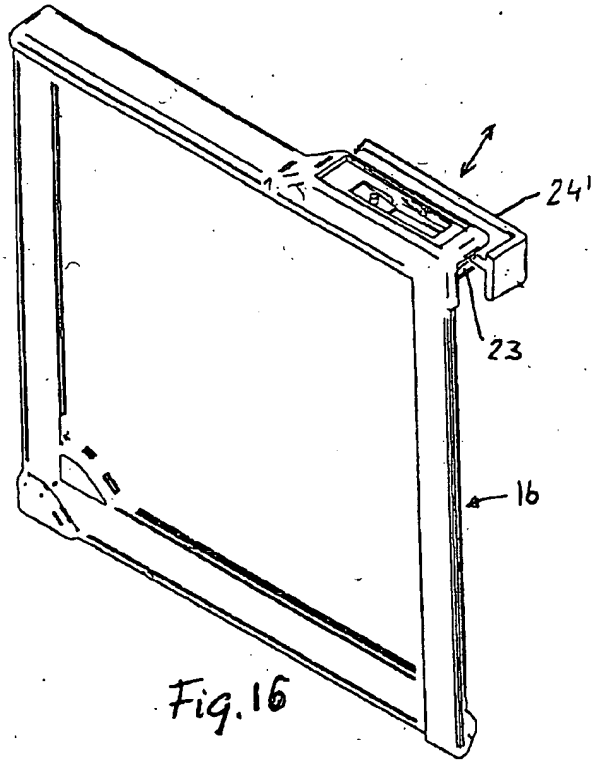


Fig. 16

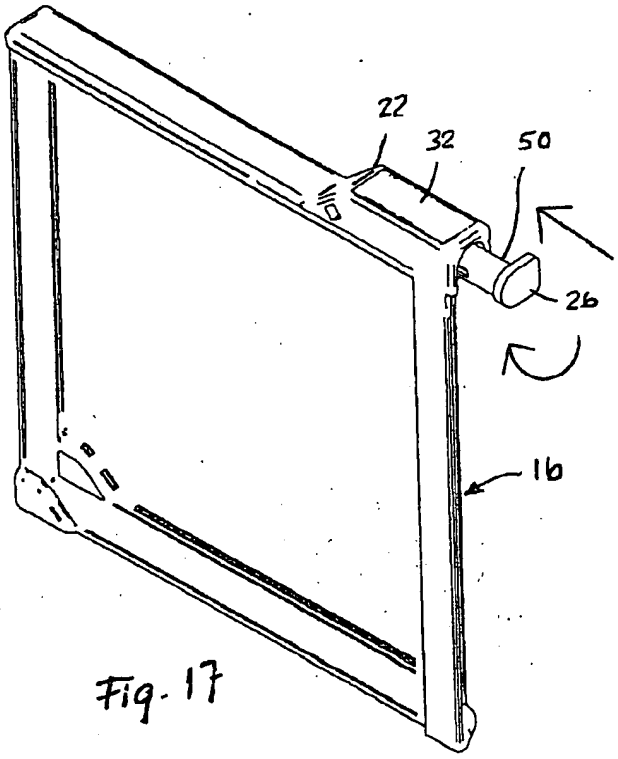


Fig. 17

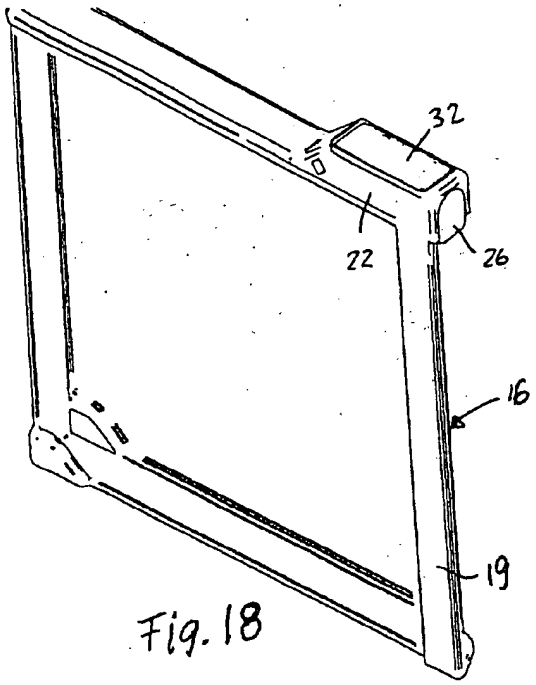


Fig. 18

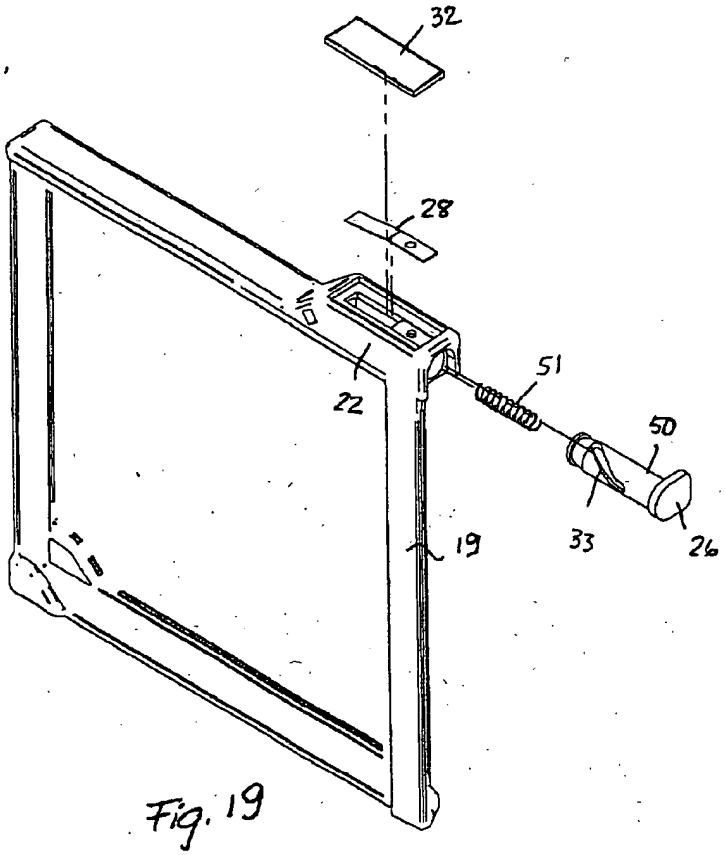


Fig. 19

European Patent Office

# EUROPEAN SEARCH REPORT

Application Number
EP 01 12 2584

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
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X : particularly relevant if taken alone
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L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

European Patent Office

Application Number
EP 01 12 2584

## CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

## LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☒ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

European Patent Office

## LACK OF UNITY OF INVENTION
## SHEET B

Application Number
EP 01 12 2584

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-7, 8,9,10-12

1.1. Claims: 1-7, 10-12
Safety device comprising detent means guided for displacement transversely of the flat side of the safety device mounted for pivotal movement or mounted for linear movement.

1.2. Claims: 1, 8.-12
Safety device comprising detent means mounted for linear combined with rotational movement.

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 12 2584

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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